## Remarks

The Office Action Summary sheet indicates this is a Final Rejection. Applicant notes that new grounds of rejection are introduced in paragraph 12, 13, 14, and 15 in the present Office Action and were not necessitated by amendment of the application by Applicant. Additionally, the Office Action did not conclude with Form Paragraph 7.39 (M.P.E.P. section 706.07(a)). Clearly, a Final Rejection would not be proper and if intended, should be withdrawn. Clarification is respectfully requested.

New claim 62 has been added. Claims 30, 32-37, 46-53, and 55-62 are pending in the application. New claim 62 is drawn to preferred embodiments of antimicrobial additives. Antecedent basis for this new claim is to be found in previously presented claims 30, 35, 60, and 61. Examination and reconsideration of the application in view of the arguments presented herein are respectfully requested.

## NEW REJECTIONS

### Claim Rejections – 35 U.S.C. 103

**Paragraph 11**

Claims 30, 32, 34-37, 47, 49-53, 55 and 57-61 have been rejected as being unpatentable over Oishi et al. in view of Endo et al.

Oishi et al. relates to a document stated by the inventors to comprise three inventions, designated "First Invention Group" (col. 1, line 47), "Second Invention Group" (col. 17, line 47), and "Third Invention Group" (col. 56, line 48). The United States Patent and Trademark Office further restricted the application into multiple distinct and/or independent inventions, which, as of the 1998 issue date of the Oishi et al. reference cited ('504 patent) had issued as four patents. The '504 patent claims only Third Invention Group subject matter relating to a thermosetting molding composition and a thermosetting expansion-forming composition. The USPTO determined the subject matter of '504 to be distinct and/or independent from that of other inventions in the document. Thus, thermosetting compositions useful, for example, as



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containers, were deemed by the USPTO to be distinct and/or independent inventions from other compositions having other utilities in the Oishi et al. filing. Countering the Examiner's argument (Office Action, page 10, lines 10-14) that the presence of diguanamines in Second and Third Invention Groups compositions provides "sufficient overlap" to apply the teachings of one group inventions to the other, Applicant notes that the USPTO did not find this to be the case. The USPTO held the Third Invention Group inventions to be distinct and/or independent from those of First and Second Group Inventions. To hold otherwise would essentially give credence to the faulty century old assertion, in this case referring to polymeric compositions comprising flame retardants, that everything had been invented and it was time to close down the Patent Office. It is to be appreciated that a single sentence in 65 page Oishi et al. document if given the unreasonably broad interpretation urged in the present Office Action would produce a chilling effect upon polymer invention forever.

The unreasonably broad interpretation of the Second Invention Group expressed by the Office Action (Office Action page 10, lines 14-18) is based on only one unclear sentence in col. 29, lines 1 to 6, of Oishi et al., without reviewing other portions of this 65 page reference. By taking this one passage literally without asking "what does this mean?" it is possible to come to an unreasonable conclusion. The statement in col. 29, lines 1 to 6, is poorly written and is open to multiple interpretations, some of which are clearly not intended. How much experimentation would be necessary to find the "needle in the haystack" that the Office Action urges? Oishi et al. lists a great multitude of thermoplastic resins in col. 29, lines 7 to 56. And even if the "needle" were found (combination of polyolefin and thermosetting resins), it being a Second Invention Group composition and the search would be for a Second Invention Group utility, how would that trigger finding a composition having Third Invention Group utility (e.g., container)? Undue experimentation would be required in such a quest. There is no guidance from the Oishi et al. reference in finding the sought after "blend" of polyolefin and thermosetting resins. The absence of suggestion or teaching to a composition of polyolefin and thermosetting resins, the absence of any discussion of blending any thermoplastic and thermosetting resins, and the absence of suggestion to utility as a plastic pallet shows the failure of Oishi et al. as a primary reference against the present invention. The quantity of experimentation necessary, the lack of direction or guidance provided by the reference, and the absence of working examples are



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important when undue experimentation is at issue, as noted in *In re Sichert*, 196 USPQ 209 (CCPA 1977) and *In re Wands*, 8 USPQ2d 1400 (Fed. Cir. 1988). Applicant urges reconsideration of this unreasonably broad interpretation of Oishi et al. based on a single unclear sentence that finds no support, and actually serves as a teaching away from a blend of polyolefin and thermosetting, in the remainder of this 65 page document. A reading of Oishi et al. in its entirety is in order by the Examiner so that he can ascertain what this reference fairly teaches.

A teaching away from an invention disclosing a combination of polyolefin and thermosetting polymers as a pallet is to be gleaned from other portions of Second Invention Group teachings. In col. 29, lines 6 to 67, we find details of the Oishi et al. invention. Col. 29, lines 6 to 56, lists many thermoplastic resins, and concludes on lines 55-56 with "blends, block copolymers, graft copolymers and rubber-modified polymers of these resins" and then there is a semi-colon(;). The semicolon is critical. It is used to separate independent thoughts. Col. 29, line 56. then resumes with "thermosetting resins", and then lists about a dozen thermosetting resins. It then concluded this thought on col. 27, lines 63-64, with "blends thereof and resins obtained by modifying these resins with rubber or the like". Then there is a semicolon(;). The semi-colon is critical. It separates independent thoughts. Members of the huge list of thermoplastic resins and members of the limited list of thermosetting resins clearly are not indicated to be blended together. The blends are within the class "thermoplastic" or within the class "thermosetting", either of which can include rubber materials. The third class near the end of col. 29 relates to rubbers; and the fourth class refers to blends of resins and oils. These four classes, thermoplastics, thermosets, rubbers, and resins/oils are treated individually as far as blends are concerned. This serves as a teaching away from combining or blending thermoplastic and thermosetting resins. Clearly, blends of thermoplastic and thermosetting resins are not intended. Third Invention Group relates only to thermosetting molding compositions which can be a container. No combination of thermosetting and thermoplastic resins are suggested or taught. By its teaching to compositions that can have either thermoplastic or thermosetting resins, the Oishi et al. patent actually teaches away from a combination or blend. Clearly, there is an avoidance in Oishi et al. to teaching such a combination or blend. The present invention, by doing what the reference tries to avoid, shows the very antithesis of obviousness. *In re Buehler*, 185 USPQ 781, 786, 787 (CCPA 1975).



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It is submitted that Oishi et al. fails to provide suggestion or teaching to a composition comprising a combination of polyolefin and thermosetting resins as well as only a non-halogenated flame retardant having utility as a pallet.

As to claim 59 (see Office Action page 6, lines 9-14) a discussion of semi-interpenetrating networks is desirable. These are not merely blends, they are true networks, one polymer having been crosslinked in the presence of the other polymer. In the present invention, a thermosetting resin is polymerized in the presence of a prepolymerized polyolefin resin to achieve a semi-interpenetrating network having one polymer interwoven with the other. This is not a "blend" which is a mix or mingling of polymers. A semi-IPN represents a true interweaving of polymers with cross-over points. Semi-IPN's and blends are described and shown in the reference, L.H. Sperling "Introduction to Physical Polymer Science," John Wiley & Sons, New York (1986) pages 46-47, which pages are enclosed and marked. Oishi et al. does not teach or suggest such a network. A blend is not a semi-interpenetrating polymer network. It is submitted that claim 59, drawn to a semi-interpenetrating polymer network, is even additionally patentable over Oishi et al.

Endo et al. relates to a multipart composition comprising reclaimed PET and polylactone resins (both of which are thermoplastics) useful as a plastic pallet that can contain a flame retardant. Endo et al. does not teach or suggest a plastic pallet composition that is a combination of polyolefin and thermosetting resins or the desirability of restricting flame retardants to those that are halogen-free.

Applicant has shown above that Oishi et al. fails to teach or suggest a pallet comprising a combination of halogen-free polyolefin and thermosetting resins with only a nonhalogented flame retardant as claimed in independent claim 30 and dependent claims 32, 34-37, 47, 49-53, 55, and 57 to 61, and Endo et al. does not overcome this essential failure. Claim 59 is even additionally patentable because its composition is a semi-IPN that is not taught or disclosed in the Oishi et al. and Endo et al. references. It is submitted, there is no motivation in the references for providing the composition urged in the Office Action. The Examiner has not presented any evidence to support the conclusion that a worker in the art would have had any motivation to make the necessary changes in the reference article to render the here-claimed article



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unpatentable. *Ex parte Chicago Rawhide Manufacturing Co.*, 226 U.S.P.Q 438 (PTO Bd. App. 1984).

As to the other dependent claims, Applicant notes:

Claim 32: Oishi et al. in col. 29, lines 56-64 does call out epoxy resins as a thermosetting resin to be blended with other thermosetting resins or rubbers. It is error to allege suggestion or teaching to blending epoxy resins with polyolefin resins.

Claim 34: The Office Action alleges Oishi et al. in col. 32, lines 51-52 and col. 32, line 67 – col. 33, line 2, teach the container comprises glass beads as a filler. This is not the case. Only the Third Invention Group (begins on col. 56, line 48) relates to the utility "container" and requires only thermosetting resins.

Claims 35, 60-62 relate to the plastic pallet of the invention comprising an antimicrobial additive as defined in dependent claims 35, and 60-62. Applicant has shown above that Oishi et al. fails to teach or suggest the composition of the present invention pallet and Endo et al. does not overcome this essential failure. Claims 36-37: Applicant has not invented flame retardants. Rather his invention resides in a plastic pallet as defined in claim 30 that can only contain a non-halogenated flame retardant. It is submitted Oishi et al. and Endo et al. do not teach or suggest the present invention plastic pallet.

Claim 47 and 51: As a basis for this rejection the Office Action alleges that Oishi et al. teach that the container comprises a filler (col. 32, lines 51-52 and 67). This is error. Oishi et al. only teaches a container in the Third Invention Group (begins on col. 56, line 48), not the Second Invention Group.

Claims 49-50: Claim 49 requires a specific type of polyolefin – one or both of a fully prepolymerized uncrosslinked hydrocarbon polyolefin resin and a prepolymerized uncrosslinked functionalized polyolefin resin. These are combined with one or more thermosetting resins. Such a combination of resins is not suggested or taught in Oishi et al. even in combination with Endo et al.

Claims 52 and 53: Again, it is a misreading of Oishi et al. to say that epoxy resins are suggested or taught in combination with polyolefin resins.

Claim 55 does not relate to a curing accelerator.



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Claim 57: This invention does not relate to novel curing agents. Rather, the invention is directed to novel plastic pallets of specified composition which, as shown above, are not taught or suggested in the references cited.

Claim 58: Curing of the present invention composition relates to curing a combination of polyolefin and thermosetting resins. This invention is not suggested or taught in Oishi et al. in view of Endo et al.

Claim 59 has been discussed above.

This rejection is based on taking bits and pieces from the cited references and with the benefit of hindsight and lack of appreciation of what the primary reference fairly teaches, cobbling together arguments for unobviousness. It is well-accepted in patent law that it is impermissible within the framework of 35 U.S.C. 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 230 U.S.P.Q. 416(Fed. Cir. 1986). Further, a claim cannot be used as a blueprint for abstracting individual teachings from references using hindsight. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 227 U.S.P.Q. 657 (Fed.Cir.1985. It is submitted there can be no obviousness in view of the references cited and this rejection should be withdrawn. Please see starred (*) paragraphs below for more complete case law references.

**Paragraph 12**

Claim 33 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and further in view of Perez et al. and in further view of Angell, Jr.

Claim 33 relates to the plastic container of claim 30 comprising structural foam comprising an integral skin and cellular core.

Applicant has shown the essential failure of the primary reference Oishi et al. and the secondary reference Endo et al. to disclose the composition of the present invention – a composition of polyolefin and thermoset resins free of halogen and a non-halogenated flame retardant, for use as a plastic pallet. It is to be appreciated that containers in Oishi et al. and the



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pallets in Endo et al. are not suggested to be produced from Applicant's combination of polyolefin and thermosetting resins.

Perez et al. relates to polymers that can have a foam construction. The foam is not disclosed to be structural. The Office Action states that "any foam would be considered to be 'structural' (col. 23, lines 58-59)" (see page 7, lines 5-6 of the Office Action). A review of Perez et al. at col. 23, lines 58-59 finds no basis for the statement "any foam would be considered to be 'structural'". The claim in Perez et al. (col. 23, lines 59-59) states that the cured composition is a foam, fiber or bead. The word "structural" does not appear. Applicant is using the word "structural" in accordance with the dictionary definition that has been made of record that defines the word as a weight-bearing part. As Applicant has noted in earlier responses, some foams are structural and some are not. "Bubble-bath" or decorative or protective coatings on articles are not structural (even though they have structure) because they are not weight-bearing.

Angell, Jr. relates to a method and apparatus for injection molded foamed plastic articles. No mixture of polyolefin and thermosetting resins is suggested or taught. No pallets are suggested or taught.

It is submitted that Oishi et al. and Endo et al. fail as references, as noted above, and the additional references do not overcome their failure to suggest or teach Applicant's plastic pallet. It is improper to selectively choose elements or concepts from the various references, without considering the references as a whole, as as to arrive at the claimed invention by using the claims as a guide. Please see starred (*) paragraphs below. It is submitted this rejection has been overcome.

**Paragraph 13**

Claim 46 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and in further view of Radican.

Claim 46 relates to the pallet of the present invention further comprising at least one RFID tag.

Oishi et al. and Endo et al. are discussed in detail in Paragraph 11 above. It has been shown that Oishi et al and Endo et al. fail as references for lack of suggestion or teaching to a



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plastic pallet comprising a combination of halogen-free thermoplastic and thermosetting resins and only non-halogenated flame retardants.

Radcan relates to a container and inventory monitoring method and system for identifying inventory using RFID tags. There is no disclosure to use of a combination of thermoplastic and thermosetting resins for a pallet.

It is submitted that the combination of Oishi et al and Endo et al. and further in view of Radican et al. do not teach or suggest the present invention even with the changes urged by the Office Action. It is improper to selectively choose elements or concepts from the various references, without considering the references as a whole, so as to arrive at the claimed invention plastic pallet composition by using the claims as a guide. Please see starred (*) paragraphs below. This rejection fails and should be withdrawn.

**Paragraph 14**

Claim 48 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and further in view of Juhanson.

Claim 48 relates to the plastic pallet of the invention comprising friction material on at least one surface thereof.

Oishi et al. and Endo et al. have been discussed in detail above in Paragraph 11. It has been shown that Oishi et al. and Endo et al. do not teach or suggest the present invention plastic pallet. Oishi et al. does not disclose blends of more than one type of resin and only thermosetting resins are taught to be useful for making containers. Endo et al. does not disclose Applicant's combination of polyolefin and thermosetting resins for making a plastic pallet.

Juhanson relates to a polyethylene non-skid case for carrying packaged soft drink and the like.

Clearly, Juhanson does not overcome the failure of Oishi et al. and Endo et al. to teach or suggest the present invention plastic pallet comprising halogen-free polyolefin and thermosetting resins and only non-halogenated flame retardants.

It is improper to selectively choose elements or concepts from the various references, without considering the references as a whole, so as to arrive at the claimed invention using the present invention claims as a guide. Please see starred (*) paragraph below.



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There can be no obviousness and this rejection should be withdrawn.

**Paragraph 15**

Claim 56 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Oishi et al. in view of Endo et al. and further in view of Perez et al..

Claim 56 relates to the pallet of the present invention (as described in detail above) comprising a catalyst specified in the claim.

Oishi et al. and Endo et al. have been discussed in detail in Paragraph 11, above. It has been shown that Oishi et al and Endo et al. fail as references for lack of teaching or suggestion to a plastic pallet comprising a combination of halogen-free thermoplastic and thermosetting resins and only non-halogenated flame retardants.

Perez et al. relates to semi-IPNs of epoxy and polyolefin resins, methods therefore, and uses thereof. Perez et al. is cited for teaching curatives for an epoxy resin. Contrary to the rejection statement (page 10, lines 3-5), Oishi et al. does not teach a pallet. As noted in Applicant's previous Response, the Perez et al. compositions can be used as a coating on a storage vessel. Coatings on a substrate are disclosed in Perez et al. to be useful for decorative or protective purposes. It is not expected that a coating will add structural support to an article. A decorative or paint coating, for example, on a wall or bridge or pallet, will not suggest to one skilled in the art that the decorative or paint coating will be useful as a structural member of the wall or bridge or pallet. Utility as a coating clearly would not serve as motivation to one skilled in the art to use the decorative coating or paint as a structural member for the wall or bridge or pallet. Without motivation provided by teaching or suggestion in the art, there can be no obviousness. *Ex parte Chicago Rawhide Manufacturing Co.*, 226 U.S.P.Q. 438(PTO Bd. A;pp. 1984). Most importantly, the curatives in Perez et al. do not overcome the essential failure of Oishi et al. and Endo et al. to teach the composition of the present invention for use as a pallet.

It is submitted no motivation can be found in the references to make the changes urged in the Office Action. Furthermore, it is well-accepted in patent law that it is improper to selectively choose elements or concepts from the various references, without considering the references as a



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whole, to arrive at the claimed invention by using the claims as a guide. Please see the starred (*) paragraphs below. It is submitted this rejection is improper and should be withdrawn.

**SUMMARY AND PERTINENT CASE LAW**

Six references have been cited in various combinations against this application. Eleven references had been cited against this application in the first Office Action. There is an old maxim said by a judge in *Ball & Roller Bearing co. v. F.C. Sandord Mfg. Co.* 297 F. 2d 163. 167 (2d Cirr. 1924) that applies to this case. One cannot make omelettes of bad eggs no matter how many are used. One good reference is better than 50 poor ones, and the 50 do not make the one any better.

Bits and pieces of those references are alleged to be capable of assembling into Applicant's invention. Using Applicant's invention as a blueprint, with hindsight, these bits and pieces are urged to be useful to reconstruct Applicant's invention. Patent law does not sanction such a hindsight reconstruction of an invention. The following case law is most relevant.

*The Board of Patent Appeals and Interferences, in a similar situation, made the following relevant arguments: Presuming arguendo that the references show the elements or concepts urged, the Examiner presented no line of reasoning as to why the artisan reviewing only the collective teachings of the references would have found it obvious to selectively pick and choose various elements and/or concepts from the several references relied on to arrive at the claimed invention. In the instant application, the Examiner has done little more than cite references to show that one or more elements or some combinations thereof, when each is viewed in a vacuum, is known. The claimed invention, however, is clearly directed to a combination of elements. That is to say, the applicant does not claim that he has invented one or more new elements, rather, he has presented claims to a new combination of elements. To support the conclusion that the claimed combinations directed to obvious subject matter, either the references must explicity or impliedly suggest the claimed combination or the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. The Board found nothing in the references that would expressly or impliedly teach or suggest the modifications



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urged by the Examiner. Additionally the Board found no line of reasoning in the answer as to why the artisan would have found the modifications urged by the Examiner to have been obvious. Based upon the record, the artisan would not have found it obvious to selectively pick and choose elements or concepts from the various references so as to arrive at the claimed invention without using the claims as a guide.

*Ex parte Clapp*, U.S.P.Q. 972 (B.P.A.I. 1985).

*The Federal Circuit, noting that using the claim in a patent application as a blueprint for rejections is not proper, has stated: To combine references (A) and (B) properly to reach the conclusion that the subject matter of a patent would have been obvious, case law requires that there must be some teaching, suggestion, or inference in either reference (A) or (B), or both, or knowledge generally available to one of ordinary skill in the relevant art, that would lead one skilled in the art to combine the relevant teachings of references (A) and (B). Consideration must be given to teachings in the references that would have led one skilled in the art away from the claimed invention. A claim cannot properly be used as a blueprint for abstracting individual teachings from references. *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 227 U.S.P.Q. 657 (Fed. Cir. 1985).

*Many of the rejections in this Office Action appear to reflect the pernicious effect of hindsight reasoning. The Federal Circuit has stated: When prior art references require a selective combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself. Something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988).

Hindsight reconstruction using bits and pieces of these six references only serves to indicate that if Applicant's invention were obvious, one or more of the many inventors involved in these references would have discovered it. Applicant submits his invention is neither anticipated or obvious in view of the rejections made using these six references.



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It is submitted that all objections and rejection have been overcome. Examination and reconsideration of the application as amended are respectfully requested. Allowance of claims 30, 32-37, 46-53 and 55-62 at an early date is solicited.

Respectfully submitted,

August 26, 2004
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# INTRODUCTION TO PHYSICAL POLYMER SCIENCE

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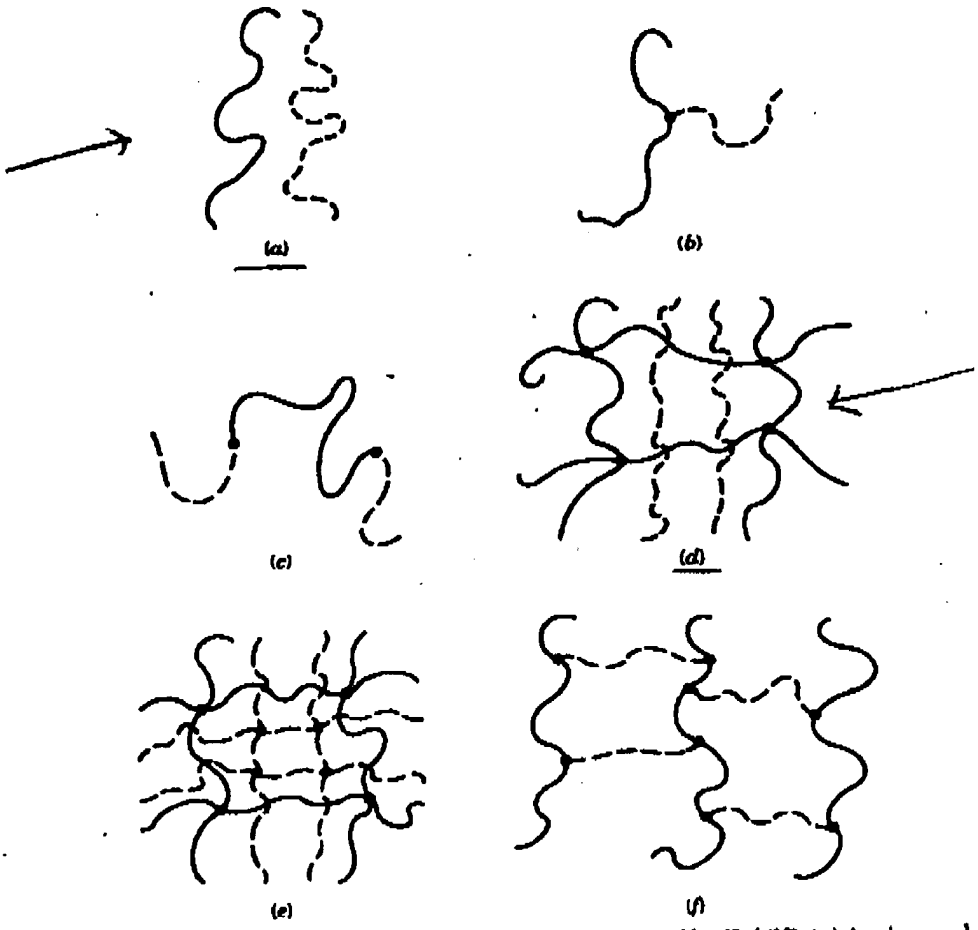


**FIGURE 2.9** Six basic modes of linking two or more polymers are identified (19). (*a*) A polymer blend, constituted by a mixture or mutual solution of two or more polymers, not chemically bonded together. (*b*) A graft copolymer, constituted by a backbone of polymer I with covalently bonded side chains of polymer II. (*c*) A block copolymer, constituted by linking two polymers end on end by covalent bonds. (*d*) A semiinterpenetrating polymer network constituted by an entangled combination of two polymers, one of which is cross-linked, and are not bonded to each other. (*e*) An interpenetrating polymer network, abbreviated IPN, is an entangled combination of two cross-linked polymers that are not bonded to each other. (*f*) A conterminously linked polymer, constituted by having the polymer II species linked, at both ends, onto polymer I. The ends may be grafted to different chains or the same chain. The total product is a network composed of two different polymers.



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mer being present. To some extent, then, the term graft copolymer may also mean, "polymer *B* synthesized in the immediate presence of polymer *A*." Only by a reading of the context can the two meanings be distinguished.

### 2.7.3 Conterminously Grafted Copolymers

The polymers of Section 2.7.2 are soluble, at least in the ideal case. A conterminously grafted polymer has polymer *B* grafted at both ends, or at various points along the structure to polymer *A*, and hence it is a network and not soluble. (See structure *F* in Figure 2.9.)

### 2.7.4 Interpenetrating Polymer Networks

This is an intimate combination of two polymers in network form. At least one of the polymers is polymerized and/or cross-linked in the immediate presence of the other (22). While ideally the polymers should interpenetrate on the molecular level, actual interpenetration may be limited owing to phase separation. (Phase separation in polymer blends, grafts, blocks, and interpenetrating polymer networks is the more usual case, and is discussed in Chapter 4.)

### 2.7.5 Other Polymer–Polymer Combinations

According to new proposed nomenclature, a polymer blend would be accorded the connective *-blend-*. Many of these blends are prepared by highly sophisticated methods and are actually on a parallel with the blocks, grafts, and interpenetrating polymer networks.

Block copolymers may also be arranged in various star arrangements. In this case, polymer *A* radiates from a central point, with a number of arms to be specified. Then polymer *B* is attached to the end of each arm.

### 2.7.6 Separation and Identification of Multicomponent Polymers

The methods of separation and identification of multicomponent polymers are far different from the methods described above for the statistical type of polymer. First of all, only the blends are separable by extraction techniques. The remainder are bound together by either chemical bonds or interpenetration. The interpenetrating polymer networks and the conterminously grafted polymers are insoluble in all simple solvents and do not flow on heating. The graft and block copolymers, on the other hand, do dissolve, and flow on heating above $T_f$ and/or $T_g$.

Most, but not all, of the multicomponent polymer combinations exhibit some type of phase separation, which will be discussed in Chapter 4. Where the polymers are stainable and observable under the electron microscope, characteristic morphologies are often manifest. The principal polymers that are stainable include the diene types and those containing ester groups. For those